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(U) Statins: Widely Available Cholesterol-Lowering Drugs Could Play Role in Potential Avian Influenza Pandemic

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(U) Intelligence Findings and Analysis

(U) Statins may warrant consideration for emergency off-label use during an avian influenza (AI) pandemic, especially if antiviral drugs or vaccines are ineffective or unavailable. Statins are safe, can be cheaply produced, and are widely available in industrial countries.

(U) Respiratory distress has been the primary cause of death in patients with H5N1 AI to date, with multi-organ failure also frequently contributing. These conditions occur as the result of an uncontrolled inflammatory response. Laboratory analysis in patients with H5N1 AI has shown elevated blood levels of substances produced by the immune system associated with this dangerous level of inflammation. Recent studies from Europe, Israel, and the United States suggest that statins may decrease the risk of conditions caused by an uncontrolled inflammatory response in patients with infections. Researchers believe that this diminished risk is due to the ability of statins to decrease the levels of certain substances produced by the immune system.

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(U) What are Statins?

(U) Statins are drugs that lower the levels of certain types of cholesterol and other lipids, and decrease the risk of heart attack and stroke. Statins also exert anti-inflammatory effects by decreasing levels of cytokines, substances that modulate immune response. Treatment with statins is considered the basis of contemporary drug therapy for atherosclerosis.

(U) In a recent report from The Netherlands, analysis of a database containing 60,000 patients showed that patients who had been prescribed statins had a 26 percent lower risk of pneumonia and other severe respiratory complications during influenza epidemics between 1996 and 2003. A study of 361 patients in Israel with bacterial infections found that patients taking statins had a lower rate of severe infections requiring intensive care admission. Two human studies in the United States reported that statin use was associated with decreased mortality in patients with pneumonia or infection in the bloodstream. An animal study in Germany showed similar promising results. Although statins suppress part of the immune system, they have not been associated with a worsening of the infection.

(U) The completion of more definitive clinical trials would be desirable before using statins for the prevention or treatment of complications associated with influenza. However, if an AI pandemic occurred before such studies can be completed, emergency off-label use of statins would be worth considering.

(U) Administrative Notes

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